USDA

UNITED STATES DEPARTMENT OF AGRICULTURE

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

WILDLIFE SERVICES

in cooperation with

NEW MEXICO DEPARTMENT OF GAME AND FISH

and

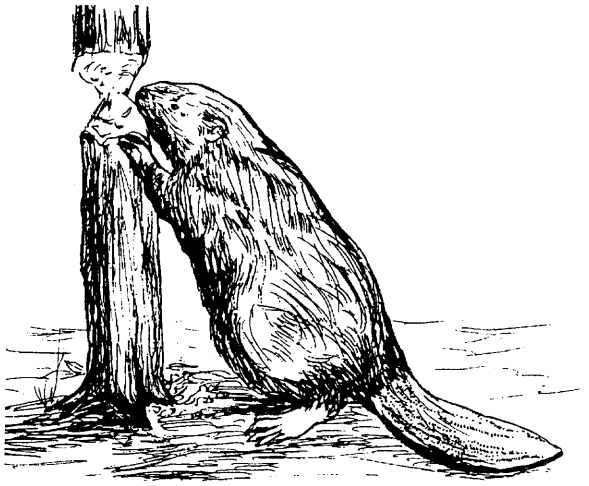
NEW MEXICO DEPARTMENT OF AGRICULTURE

FINDING OF NO SIGNIFICANT IMPACT,

RECORD OF DECISION,

and

ENVIRONMENTAL ASSESSMENT



AQUATIC RODENT DAMAGE MANAGEMENT IN NEW MEXICO

FEBRUARY 2004

Finding of No Significant Impact and Decision for Aquatic Rodent Damage Management in New Mexico

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS), Wildlife Services (WS) program responds to a variety of requests for assistance from individuals, organizations and agencies experiencing damage caused by wildlife in New Mexico. WS activities are conducted in cooperation with other federal, state, and local agencies, as well as private organizations and individuals.

Ordinarily, according to APHIS procedures implementing the National Environmental Policy Act (NEPA), individual wildlife damage management (WDM) actions maybe categorically excluded (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). WS prepared an environmental assessment (EA) to comply with APHIS NEPA implementing regulations and interagency agreements, to facilitate planning, interagency coordination, streamline program management, and involve the public. The predecisional EA, released by WS in October 2003, documented the need for aquatic rodent [beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), and nutria (*Myocastor coypus*)] damage management (ARDM) in New Mexico and assessed potential impacts of various alternatives in relation to issues analyzed for responding to aquatic rodent damage problems.

WS' proposed action was to allow the use of the full range of ARDM methods on all lands authorized in the State for the protection of agriculture, property, natural resources, and public safety. WS cooperates closely with the New Mexico Department of Game and Fish (NMGF). In New Mexico, beaver, muskrat, and nutria are classified as furbearers. Furbearers are protected by State law and NMGF is responsible for management of these species. Under State law, NMGF must respond to complaints from private landowners or lessees when these species are causing damage. WS, under contract, assists NMGF with responding to these complaints. WS also assists public entities and Tribes with ARDM when requested and when they have the appropriate permits necessary for ARDM from the NMGF, as required.

A major overarching factor in determining how to analyze potential environmental impacts of WS' involvement in ARDM is that such management will apparently be conducted by state and local government, or private entities as required by State law that are not subject to compliance with NEPA even if WS were not involved. In fact, WS conducts much of its ARDM as an agent of landowners as directed by NMGF in accordance with a contract. This means that the Federal WS program has limited ability to affect the environmental outcome of ARDM in New Mexico, except that the WS program is likely to have lower risks to nontarget species and less impact on aquatic rodent populations than some alternatives available to NMGF and public and Tribal entities. Therefore, WS has limited ability to affect the environmental *status quo*. Despite this limitation of federal decision-making in this situation, this EA process is valuable for informing the public and decision-makers of the substantive environmental issues and alternatives of ARDM for resource protection.

Public Involvement

A total of 8 draft EAs were sent to agencies with professional expertise covering different aspects (ie. wildlife populations, water) of the EA for their review and comments. Comments received from these agencies were incorporated into the EA. Following interagency review of the draft EA, an EA was prepared and released to the public for a 42-day comment period. The resulting EA was sent directly to 71 interested public and private organizations and individuals. In addition, a "Notice of Availability" of the predecisional EA was published in 11 New Mexico newspapers (the Albuquerque Journal and Tribune, Santa Fe New Mexican, Carlsbad Current Argus, Roswell Daily Record, Hobbs News Sun, Artesia Daily Press, Portales News Tribune, Clovis News Journal, Las Cruces Sun News, and Silver City Press) for 3 consecutive days for daily newspapers and 1 day for weekly newspapers. The legal notices appeared in the newspaper from approximately November 20-22, 2003. The deadline for comments was set at December 19, 2003.

Public Comments

A total of 5 comment letters were received in response to the predecisional EA; all from nonprofit organizations. Most all comments in the letters received were adequately addressed in the predecisional EA, but some will be discussed further where necessary to provide clarity. In addition, some comments were received that had not been addressed in great detail in the EA, and, therefore, the EA was supplemented to provide additional information for clarification in the appropriate area to address these concerns. Comments that were received are discussed below.

Comment 1: A few commentors thought that beaver causing damage should be relocated.

Response 1: Relocation would have to be in accordance with NMGF and their management plan for beaver. WS would work with NMGF on relocation projects if requested, but WS would only conduct relocation programs at NMGF's request and under their authorization.

The beaver population is at historic levels in much of New Mexico and the United States. In some areas they have vastly exceeded that number and are overabundant. As such, most population management methods are no longer used to reintroduce beavers to areas because few areas exist where beavers have not reestablished or have the potential to recolonize. New Mexico does have the potential for some sites for relocation, but such programs would not likely be conducted where a population already existed. Beaver are territorial and relocating beaver could likely result in problems if they were relocated to areas with beaver already present. Territorial beaver fight and losers must set out for new areas. In the process, many beavers would likely die because they may not be able to find suitable, unoccupied habitat or wind up in areas where they would have to be recaptured. One study in Wyoming where beaver were relocated to unoccupied habitat found that relocated beaver losses to mortality and emigration from the relocation site was about 50%; 100% of beavers 2 years old or less died or emigrated away from the release site after being relocated (McKinstry and Anderson 2002). Additional information can be found in the EA as to why relocation is not often done, such as the potential to transmit disease to the relocation site.

Comment 2: A commentor indicated the description of the Proposed Action insufficient and vague, leaving the public with no clear idea of what action WS may take in response to requests for assistance with aquatic rodent conflicts.

Response 2: WS disagrees with the comment that the EA was weak in its discussion of the Proposed Action and believe that the EA had ample discussion of the Proposed Action and methods used in ARDM in Sections 1.4 and 3.2.1 of the EA. The EA is often vague because WS does not know where and when WS will be requested to conduct ARDM and WS cannot predict this except to say that it will be in the range of aquatic rodents in New Mexico. Planning for the management of aquatic rodent damage must be viewed as being conceptually similar to federal or other agency actions whose missions are to stop or prevent adverse consequences from anticipated future events for which the actual sites and

locations where they will occur are unknown but could be anywhere in a defined geographic area. Examples of such agencies and programs include fire and police departments, emergency clean-up organizations, and insurance companies. Similarly, WS Specialists must determine at a site where they have been requested to provide assistance specifically, a management strategy that will be used to resolve the problem; the WS Decision-model (Slate et al. 1992) is used and was discussed thoroughly in USDA (1997) with specific examples for beaver damage scenarios. It is impossible to run through all the scenarios that WS Specialists face because each damage situation is fairly unique, but management strategies for the different situations often recur and the methods were given. In New Mexico for example, where an irrigation ditch (a man-made structure) is dammed and flood waters expand out over cropland, often the beaver are removed lethally because they do not meet with the landowner's structure (getting water from point A to point B) or land-use (crop) objectives, and none of the ARDM methods are likely to get the beaver to move on their own. Additionally, the dam is usually removed and the landowner is often told about exclusionary techniques that will keep beaver from returning unless they venture over land. Section 1.3 of the EA gives information of the types of damage aquatic rodents cause and Section 3.2.1 gives information on the methods that are used to resolve aquatic rodent damage. We believe that these Sections provide enough information to assimilate strategies used in ARDM along with information from USDA (1997) and, thus, we believe the EA speaks for itself.

Comment 3: A commentor thought that no information was given on the frequency of various management actions and how often the various management methods are employed. A simplistic model, the WS Decision-making process (Slate et al. 1992), described in the Proposed Action does not give an idea of what management methods will be used to resolve problems. While the EA reported the number of animals killed, it did not report the number of actions taken in recent years or even the total number of times WS provided assistance. Such information is vital in order to reasonably assess the current program, the Proposed Action.

Response 3: WS disagrees and believes that the Proposed Action was amply discussed in Sections 1.4 and 3.2.1 of the EA. Currently, the Management Information System (MIS), the computer tracking system used by WS to obtain data on ARDM, does not track all information that occurs for each damage request and how each complaint is resolved. The MIS does track the number of requests that are handled strictly by technical assistance and those that are handled through direct damage management which is often coupled with technical assistance that is not recorded. Table 1a of the EA gives the number of requests for beaver for FY00 to FY02 which averaged 28 requests per year. Of those, WS handled, on average, 11 by technical assistance alone and 17 through direct control often combined with technical assistance. It is unknown whether or not each direct control project resulted in the take of beaver. Of the 3 total requests for muskrats (Table 1b) from FY 00 to FY02 (average 1/year), WS handled 2 by technical assistance and 1 through direct control.

WS began the development of a new MIS system called MIS 2000 to take advantage of new technologies, but it has not been implemented. It is expected that the new system will be in place in FY 05. The new system will potentially capture such information as all of the methods used to resolve a complaint and provide a report that quantifies this. However, in lieu of having that information, WS did list current methods available for use or recommendation by WS Specialists. Per WS Policy, the array of ARDM methods are considered in determining an appropriate strategy (the WS Decision-making model (Slate et al. 1992)) to resolve a damage problem (this was discussed thoroughly in USDA (1997) and examples of specific beaver damage situations in urban and rural areas were addressed (USDA 1997 - Appendix N). Additionally, WS dissemination of information on the potential of using different methods is difficult to quantify because it is not restricted to conversations between WS field specialists and resource owners. NWRC and WS operational personnel use journal articles and presentations at meetings, conferences, and workshops to present data on nonlethal alternatives which cannot be quantified as to the extent of their effect.

Finally, the analysis in Chapter 4 provides the information necessary to assess the current program and impacts on the quality of the human environment. WS feels that the analysis in Chapter 4 speaks for itself.

Comment 4: Several comments were received regarding the cost effectiveness of the ARDM program.

Response 4: WS Specialists, that respond to damage complaints, estimate the value of the damage done by beaver and muskrat when they arrive at a site or ask the cooperator what they believe the value to be. A common misconception that the public has when using damage data is that the damage that WS documents is the total damage. Actually, this

is the damage prior to WS intervention. It gives an indication of aquatic rodent damage in New Mexico (an index), but does not actually reflect cost-effectiveness. Without intervention, damage would continue and is be expected to be much greater. Often it would be expected that damage would escalate and surpass the damage that had already been done. Intervention, eliminates or reduces further damage to acceptable levels for the landowner who has already lost the value of damage as identified by WS Specialists. Damage could be the flooding of crops, a house, and other property which, if allowed to continue, could have enormous costs. A good example is the potential flooding of a house; WS receives periodic requests where flooding waters are encroaching a house. Most times, WS can remove the beaver and newly created dam prior to any real damage. If the beaver were allowed to continue to build the dam, the house could be flooded, and damage could rapidly escalate into the thousands should the flood waters reach the house.

A very challenging task for WS has been to determine the effectiveness of WS applied ARDM because one must first predict how much more damage would have occurred if a control strategy had not been implemented. With this number, cost effectiveness can be determined for resources with monetary value, but cannot for nonmonetary values such as the protection of human health. WS in North Carolina, where beaver are a primary focus of the WS program (about 50 to 100 times the effort of the New Mexico ARDM program), has determined the cost-effectiveness of the program by quantifying the damage saved for projects involving monetary values (WS 2003). They have been able to generate data to determine the overall cost savings of conducting beaver damage management by estimating the value of resources remaining in an area that would have likely been damaged should damage have been allowed to continue. WS (2003) determined that the cost:benefit ratio of the program was 1:7.1; for every dollar spent by the WS program the landowner realized a $7.10 return. On another project in the Mississippi WS Program, it was estimated that $198,000 was saved on one timber protection project which cost $ 11,000, a 1:18 cost:benefit ratio. To obtain this estimate requires considerable effort on the part of the WS Specialists to acquire the additional data and a computer database able to accept it. ARDM is only a small portion of the New Mexico WS program (~$10,000??), and collecting data (resources saved) for such would not substantially improve the analysis in the EA and the decision-making process.

Finally, ARDM by WS in New Mexico is almost entirely funded by cooperators. Cooperators would not continue to rely on WS if it was not a cost-effective program.

Comment 5: One commentor thought that the damage losses should reach a threshold, be significant, prior to conducting ARDM.

Response 5: WS believes that this was addressed sufficiently in the EA in Section 3.3.3. Additionally, the New Mexico State law that requires NMGF to resolve complaints does not have a threshold, but requires NMGF to resolve the problem.

Comment 6: One commentor was concerned about the direct and indirect effects WS ARDM has on nontarget species. Another remains concerned that WS ARDM will affect nontarget species...

Response 6: WS addressed the issue of nontarget take throughout the EA. Direct affects would include capturing nontargets incidental to ARDM such as turtles, big fish, and mammals that frequent aquatic sites such as raccoons. Indirect effects could include the removal of beaver or dams from an area which could potentially reduce the wetlands. WS is very concerned about the direct effects of ARDM on nontarget species (Section 2.2.1) and takes steps to avoid nontarget take (Section 3.4.2.2). WS is also very concerned about the indirect effects of ARDM, dam removal, on nontarget species (Section 2.2.3) and takes steps to avoid impacting wetlands (Section 3.4.2.4). WS personnel record nontarget take and this take was analyzed (Section 4.2.2). WS also analyzed impacts on wetlands under the different Alternatives in Section 4.2.4. We believe the EA speaks for itself.

> **Comment 6 a:** ...including river otter (*Lutra* [*Lontra*] *canadensis*)... Otters are being reintroduced and recovered in northern New Mexico and the EA did not address this.
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> **Response 6a:** The Southwest river otter (*L. c. sonora* [*sonorae/sonorensis*]) subspecies once inhabited New Mexico, but the record is meager. The last otter taken in New Mexico was by a beaver trapper in the Gila River drainage near Cliff, New Mexico in 1953, but it has long been thought that river otters have been extirpated

(Findley et al. 1975, Regan Smetak, NMGF, pers. comm. 2004). Unverified sightings have occurred since then, but mainly from northen New Mexico where it is believed that if they did occur, they were likely from releases made in Colorado or, possibly, Arizona. Debate has ensued whether or not the southwestern subspecies was a unique subspecies or not because its unique characteristics were based on only 3 specimens. Typical characteristics of the Southwest river otter were that they were larger, had a unique head shape, and had a paler pelage; modern forensic biology may undoubtably be able to resolve this debate. Based on the lack of evidence for creating a new subspecies, the U.S. Fish and Wildlife Service (USFWS) did not consider or list the Southwest subspecies as a T&E species nor is it listed by NMGF on their T&E list. River otter have been seen, but unverified, in northern New Mexico and if they are present, are thought to be from reintroduction efforts in Colorado, or possibly Arizona, that started in the 1970s. This has stirred up more debate; should New Mexico reintroduce any river otter or hope for a population of the Southwest subspecies (there are none in captivity nor any known populations) to show up. The Colorado otter population was started from otters that came from several states, but are not the Southwest subspecies. If Southwest otters still exist in New Mexico, different otter subspecies would further imperil any hopes of establishing the Southwest subspecies, should it be determined to be separate, from loss of genetic integrity.

With that said, otter are taken as nontargets in beaver damage management because of their similarity in size and habitat selection as the beaver. None have been taken by WS in New Mexico from FY 94 to FY 03. WS Specialists in New Mexico are knowledgeable about otter sign and, if found, they would relay that information to NMGF. The incidence of otter taken as nontargets is greatly reduced by experienced trappers and this has been the case in many states where otters are present and WS has an active ARDM program. In an attempt to reduce otter take, many trigger designs have been made for quick-kill traps and had claims of great success by their manufacturer. Recent research by NWRC and WS has found that a variety of "otter-safe" triggers and other trigger configurations for conibears were not effective at reducing the incidence of non-target take (D. Nolte, NWRC, pers. comm. 2003 *unpubl. data*). The research did find, that the single biggest factor for avoiding nontarget take was trapper experience. WS hires most personnel with professional experience which, therefore, is likely to reduce nontarget otter take. In addition, supervisors work with WS personnel to show proper sets as needed. Therefore, we conclude that, while the take of nontarget otters in ARDM is a potential, WS Specialists will continue to strive to keep this to a minimum. It has not been a problem in New Mexico as discussed in 4.2.2.1 and will likely continue to be lower than under the other alternatives should otters make a comeback as a result of experienced and professional WS Specialists implementing ARDM in New Mexico.

Comment 6b: ...and southwestern willow flycatcher (*Empidonax traillii extimus*). Beavers create habitat for willow flycatchers. Should not remove beaver dams. Need required mitigation measures to ensure that WS does not impact flycatcher such as no ARDM from April 15 - July 15 so that nests and nestlings are not disturbed during that time.

Response 6b: The southwestern willow flycatcher, a Federal endangered species, occurs in riparian habitats with dense vegetation such as willows, tamarisk, or Russian olives. It is found in western New Mexico from spring through summer. This species is highly insectivorous, taking insects on the wing or gleaning them from vegetation. The flycatcher is found throughout most of western New Mexico with the majority found in the Gila Valley of Grant County (Williams and Leal 1998). Several reasons have been cited for their decline including habitat degradation, water changes, fire, invasive plant encroachment, nest parasitism by cowbirds, predation (especially nestling/egg by great-tailed grackles (*Quiscalus mexicanus*) and possibly corvids), and negative impacts associated with recreational and research activities.

WS has consulted locally with USFWS and determined that ARDM as conducted in New Mexico will not adversely affect the flycatcher or its habitat. The WS ARDM method that has the potential for affecting the flycatcher is the removal of established beaver dams that have been established for many years. However, this activity would most likely require a section 404 permit from the Army Corps of Engineers. WS in New Mexico, does not remove established beaver dams that have become wetlands and almost always conducts beaver damage management for very recent beaver activity. Recent beaver activity does have the potential to impact this species by flooding established habitat and cutting down the flycatchers' nesting trees and, thus, beaver

damage management could benefit the species. The only other ARDM activity that could potentially have an effect on the flycatcher is just the presence of WS personnel near nesting sites. However, WS field personnel usually do not remain in any area for long times (usually less than 1 hour) and move on shortly after conducting ARDM activities. Flycatchers are typically not shy birds and brief interactions are not likely to cause them to be disturbed or abandon nest sites. However, since the WS program has the potential to affect the flycatcher in many states, WS has initiated consultation at the national level to ensure that WS activities do not impact the flycatcher. However, WS in New Mexico does not have programs that involve the methods considered to have a significant adverse effect on the flycatcher which USFWS in New Mexico has concurred (2003).

Comment 7: One commentor noted that beavers are found throughout New Mexico and not only in northern and southwestern New Mexico (pg. 5).

Response 7: The description of the beaver range in New Mexico was where beaver are most abundant. Beavers are found throughout New Mexico in suitable habitat. This was edited to reduce the confusion.

Comment 8: A commentor stated that WS's professed allegiance to integrated wildlife damage management (IWDM) is good. Hopefully not like WS's control of predators which has not been good because too often traps, shooting, and denning have occurred in ways that are unsafe or illegal or at least not the best solution to the problems, and often they weren't any solution. Hopefully this will be different in ARDM. It is not adequate for the EA to merely state that lethal control will be used if nonlethal control would not adequately address the problem without any discussion of how it is predicted that nontlethal control methods would not work.

Response 8: WS uses IWDM consistently to resolve problems. IWDM considers all available approved methods of prevention and management to reduce damage caused by wildlife and was discussed thoroughly in the EA in Sections 1.1.1, 1.4, and 3.2.1.1. WS disagrees with the comments on unsafe, illegal, and unwise use of predator control IWDM methods and refers the commentor to WS predator damage management EAs for New Mexico and USDA (1997) because the comment was outside the scope of the EA. WS Specialists are knowledgeable about ARDM methods and use them accordingly. In areas where nonlethal methods are appropriate, WS personnel suggest such to the landowners. However, WS Specialists are professionals and realize when and where these methods will work and run through them in the WS decision making process (USDA 1997). WS applies IWDM (WS Directive 2.105) to reduce wildlife damage. WS personnel use the WS Decision Model (Slate et al. 1992) at each site to determine the most appropriate methods and strategies to resolve wildlife damage as discussed in Section 3.2.1.1 of the predecisional EA and WS Directive 2.105. Nonlethal methods are given preference where practical when formulating a damage reduction strategy (WS Directive 2.101). When nonlethal methods alone are not practical, WS uses or recommends a combination of lethal and nonlethal methods to address damage problems. WS personnel use their expertise to determine the appropriate response to wildlife damage at each site. In situations where experience has shown that nonlethal methods are not effective, WS personnel may use lethal methods as their primary tool. In addition, available nonlethal methods are often recommended to those sustaining damage if these methods are not already being used. The use of both lethal and nonlethal methods can greatly enhance the efficacy of a damage reduction strategy. Ultimately, the goal is to preserve wildlife while resolving conflicts between humans and wildlife. As far as using IWDM, we believe that the EA speaks for itself.

Comment 9 Many nonlethal methods that have been researched including those from NWRC were not included in the methods sections and much of the information was outdated. Abrasives are only briefly mentioned in the EA and it appears that WS has not kept up with more recent advances in technology.

Response 9: Since it was thought that WS was not keeping up on new technology, the methods section in the EA was expanded in Section 3.2.1.3. WS is very aware of current nonlethal technology regarding abrasives, electrical barriers and pond-levelers, but realize that they only work in certain situations; recent research indicated the effectiveness of such devices are at best 50% and with the expense may not be effective for several situations, especially where private landowners do not have the money to install such devices or where they are not committed to maintaining them. With the additional information included in the EA, we believe the EA speaks for itself.

Comment 9: The current drought combined with removal of beaver will have significant cumulative effects.

Response 9: The drought is a real concern and will impact the beaver population in New Mexico should it continue. If areas do dry up as a result of the drought, over time, it will reduce the beaver population. However, this will significantly reduce the need for ARDM because beavers will only inhabit the larger water courses such as rivers and large reservoirs where water would still be found and these are areas where ARDM is seldom conducted. Therefore, the cumulative effect of such an event and ARDM would be minimal because the drought would dictate the outcome. However, events such as droughts are outside of the scope of this EA because WS cannot reasonably predict their duration and severity.

Comment 10: Drowning and so-called "quick-kill" traps are inhumane and clearly condemned by the AVMA 2000 Euthansia Report. Conibears result in an inhumane death. Drowning is not euthanasia (Ludders et al. 1999). The only acceptable methods of euthanasia are live-capture with subsequent euthanasia by lethal injection, CO2 inhalation, or gunshot. An animal's suffering is an objective fact. The EA did not discuss the issue of humaneness relative to nontarget injury from ARDM methods.

Response 10: Drown sets are commonly used for beaver and muskrat with leghold traps and snares. The AVMA 2000 panel on euthanasia (Beavers et al. 2001) listed drowning as an inhumane method of euthanasia, but offered no supporting evidence for such. The AVMA panel report (Beavers et al. 2001) was intended for use by members of the veterinarian profession and recommendations were intended to serve as guidelines for veterinarians who must use their professional judgement in applying them to the various settings where animals are to be euthanized. Because this was brought up as an issue and was only discussed briefly in the EA, Section 2.2.2 in the EA was expanded to include a more thorough discussion of the issue.

Quick-kill traps have been a standard name associated with the Conibear type traps for years. However, because this was brought up as an issue, WS expanded the humaneness section in 2.2.2 to discuss this issue further. However, WS still believes that most beaver, especially smaller ones, and muskrats die quickly as a result of injury/drowning in conibears. Gilbert (1976) stated that most animals were clinically dead in 1 ½ minutes (EEG), but their hearts kept beating past 10 minutes (ECG) as a result of their physiology. However, the Conibears used by him had half of the force that he used for a beaver to survive. His animals were sedated and not in water and therefore, provide less evidence that they survive great lengths of time underwater because of the stress and inability to breath. Conibear traps are very efficient at capturing beaver and muskrat. The trap is designed such to kill them soon after capture. Smaller size beaver and muskrats probably die very quickly after the trap is closed, especially when set appropriately. Those that do survive may hold their breath until they die, which for a relatively short period of time could be painful. However, this issue was expanded in the EA.

WS believes that the issue of humaness was analyzed thoroughly enough in 4.2.3 for the decision-maker to select an alternative. Some ARDM techniques, as discussed above, are considered to be inhumane. Yet, they still are the best methods for resolving problems in ARDM and, in the case of drowning, cause the quickest death for an animal that is slated for removal. If the only acceptable humane methods of euthanasia are following live capture, many complaints would not be resolved because live traps are often the least successful method available to WS Specialist that need to resolve complaints. Thus, this creates a tradeoff between a quick death and a drawn out death with potential for injury ending in euthanasia. ARDM techniques considered inhumane by some people would be used most professionally with the least amount of animal pain and suffering under the Proposed Alternative whereas these could increase under the other Alternatives as analyzed in Section 4.2.3.

The commentor stated that animal suffering is an objective fact. Unfortunately, animal suffering is only a subjective fact, not objective, that has been attempted to be measured objectively. Human stress indicators can be objectively measured in animals such as epinephrine, but humans do not have the ability to perceive an animal's pain and suffering because that would be anthropomorphic (ascribing human characteristics to nonhuman things). Human's perceive what that person would feel in that situation, which in itself is different for every individual (ie. a person may play football with injuries such as a broken thumb and only notice the injury on occasion whereas the next person may stay home from work and take pain medication for the same injury). Therefore, while we believe that animals suffer similarly to humans in some situation, it is only subjective and not an objective fact.

As discussed in comment 6 above, it is noted that nontargets can be taken in ARDM. Quick-kill traps were noted that they do not always kill an animal, especially nontarget animals larger than the intended target and that the EA did not discuss their pain and suffering. The issues of nontarget take and humaneness were discussed in the EA. Nontargets are taken with ARDM methods and the number of animals taken as nontargets would likely be most under the other Alternatives analyzed in the EA because the use of ARDM methods would likely increase by the general public including those inexperienced in their use. Therefore, we believe that the overall animal pain and suffering would be least under the Proposed Action. Even so, WS expects to take some nontargets that survive in quick-kill traps. The most common animal that survives quick-kill traps are turtles because their carapace protects them. It is unknown the amount of pain and suffering that they incur. However, they are released if it is deemed that they will be able to survive. Otherwise they are euthanized at the trap site. The relative low incidence of nontarget take by WS indicates that animal suffering is very limited under the Preferred Alternative than under the other alternatives.

Comment 11: Commentor concerned about the use of zinc phosphide in ARDM and its potential for impacting nontargets.

Response 11: WS is aware that chemical pesticide use can be quite concerning to the public, especially the public that is unfamiliar with that chemical, the labeling, and how it is used. The use of zinc phosphide in muskrat and nutria damage management is fairly safe with a low potential to affect a few nontargets species. USDA (1997 - Appendix P) completed a formal risk assessment and concluded that the use of zinc phosphide presented few risks, especially in ARDM. Further information on zinc phosphide was added to the EA in Section 3.2.1.3 to address this concern.

Comment 12: Commentor does not support local population suppression.

Response 12: This was addressed, generally, in Section 3.3.4 WS does not generally conduct population suppression except at the very local level. Aquatic rodents are removed from areas where they are unwanted because they are causing damage and do not meet with the landowners land/structure-use objectives (ie. beavers in an irrigation ditch). This typically amounts to a few individuals or colonies in a given area such as in a small drainage. This does not qualify as population suppression because an aquatic rodent population covers a much broader area. Therefore, WS believes that this has not been an issue in New Mexico, especially considering the low numbers of beaver removed annually.

Comment 13: A commentor questioned what was the basis for saying that illegal activities would increase if WS did not conduct ARDM. Another commentor questioned why the illustration of the man in Oklahoma who suffered a heart attack was included in Section 3.2.2 because it is more likely that WS Specialists traveling to damage management sites are more likely to be in traffic accidents.

Response 13: This is a potential issue brought out in the EA because WS believes that this would be more likely to occur if professional assistance in ARDM was not given. USDA (1997) discusses examples of the potential for misuse of wildlife damage management methods as a result of no program. USDA cited a document that discussed case histories of the illegal use or misuse of pesticides to remedy wildlife problems (White et al. 1989). This is not uncommon. Just a quick look on the internet and you can find several cases/convictions for frustrated property owners illegally using wildlife damage management methods such as pesticides and traps to resolve a damage problem. For example, in Georgia on a quail plantation, predatory birds were being killed by eggs that had been injected with carbofuran (the Federal Wildlife Officer 2000); in Oklahoma , Federal agents charged 31 individuals with illegally trapping and killing hawks and owls to protect fighting chickens (USFWS 2003). The Texas Department of Agriculture has a website and brochure devoted solely to preventing pesticide misuse in controlling agricultural pests (Texas Department of Agriculture 2004). Similarly, the Britain Department for Environment, Food and Rural Affairs has a "Campaign Against Illegally Poisoning of Animals" (Dacko 2004). WS Specialists have heard of many anecdotal reports of people using different methods that would be unsafe for the environment such as pouring the herbicide paraquat into a stream to get rid of beavers. The commentors may believe that these types of activities do not take place, but they do. WS Specialists typically do not assist persons that already have an ongoing wildlife damage management program, especially where they are controlling the same species with a pesticide (WS Directive 2.401). WS Specialists frequently have been requested for assistance because people using wildlife damage management techniques improperly are having trouble resolving problems; most people were unaware of WS and when they find out that WS has a wildlife damage management

program, they often abandon their efforts and let WS resolve or assist them with their problem. WS believes that if WS Specialists respond to their wildlife damage complaints either with technical assistance or direct control, and makes a professional effort to reduce losses, that at least those persons would not be as likely to use improper/illegal techniques.

Comment 14: How often does WS check traps?

Response 14: WS Specialists check their traps according to State law or Special Authorization such as a State statute, and WS Policy (WS Directive 2.450). Trap check requirements for WS are currently set at twice per week for traps and once per week for snares. WS continually endeavors to balance the need to provide practical and effective solutions to wildlife damage problems while still striving to minimize animal suffering. WS could adopt more frequent trap check intervals; however; this would result in substantial increases in program costs.

Comment 15: WS is not needed, NMGF can do ARDM themselves.

Response 15: NMGF contracts with WS because WS has personnel that can often respond quickly to aquatic rodent damage situations where NMGF cannot. In some situations especially involving beaver, a rapid response can make a substantial difference in the amount of damage that is done. NMGF does not have to contract with WS, but they have found it to be cost-effective. If WS did not assist them, they would have to conduct the ARDM anyway, under state law or contract it out.

Comment 16: The commentor stated that, as given in Section 3.4.2.3, it was reassuring that WS personnel abide by relevant laws and regulations when conducting ARDM, but that obeying laws and regulations is not a mitigation measure, but a minimum standard expected of public employees and all citizens. It should be removed.

Response 16: In essence, the commentor is partially right. However, abiding by laws and regulations is mitigation because relevant laws and regulations were put into place by the public to mitigate problems. Therefore, it is vital that the public know that these relevant laws and regulations are being followed, even though it mostly goes without saying. WS standard operating procedures set forth by WS Directives emphasize adherence to laws and regulations and thus it is, in essence, mitigation to lessen impacts on the environment. Not all people that read the EA and not all federal agencies abide by State laws, and thus it is important to state. Therefore, the mitigation was not removed from the EA.

Major Issues

Cooperating agencies and the public helped identify a variety of issues deemed relevant to the scope of this EA. These issues were consolidated into the following 5 primary issues that were considered in detail in the predecisional EA:

- Effects on Target Aquatic Rodent Species Populations
- Effects on Nontarget Species Populations, Including T&E Species
- Humaneness of Control Techniques
- Effects of Beaver Dam Removal on Wetland Wildlife Habitat
- Effects of ARDM Methods on Public Safety

Affected Environment

The areas of the proposed action is to continue conducting ARDM along streams, rivers, lakes and other areas where aquatic rodents are causing damage to agriculture, property, natural resources or public health and safety to private, public, and Tribal properties in new Mexico. ARDM will only be conducted where the appropriate Agreement for Control or Work Plan is in place allowing ARDM methods to be used and at

the request of NMGF, Tribe, or other Federal Agency that manages land. The current program's goal and responsibility is to provide service when requested within the constraints of available funding and manpower.

Alternatives Analyzed in Detail

Three potential alternatives were developed to address the issues identified above. Seven additional alternatives were considered, but not analyzed in detail. A detailed discussion of the anticipated effects of the alternatives on the objectives and issues is described in Chapter 4 of the EA. The following summary provides a brief description of each alternative and its anticipated impacts. Table 3 in the predecisional EA summarizes the environmental consequences (issues) of each of the alternatives in a table format.

Alternative 1. Continue the Current Federal ARDM Program (Proposed Action/No Action). Consideration of the No Action alternative is required under 40 CFR 1502.14(d), and provides a baseline or the environmental *status quo* for comparing the potential effects of all the other alternatives. In this EA, the "No Action" alternative is consistent with CEQ's definition. In the case of the ARDM EA for New Mexico, the No Action Alternative was the equivalent of the Proposed Action Alternative and the Current Program. Alternative 1 benefits individual resource owners/managers, while resulting in only low levels of impact on target and nontarget wildlife populations, minimal potential to adversely impact ecosystems, very low risks to or conflicts with the public, and low risk to T&E species. Current lethal methods available for use are fairly selective for target species and appear to present a balanced approach to the issue of humaneness when all facets of the issue are considered. The "No Action" alternative is a procedural NEPA requirement (40 CFR 1502.14(d)), and is a viable and reasonable alternative that could be selected. It will serve as a baseline for comparison with the other alternatives.

Under the current program, WS responds to requests for ARDM to protect human health and safety, agricultural crops and resources, property, natural resources, threatened and endangered species, and forestry in New Mexico mostly at the request of NMGF, the agency with responsibility of managing aquatic rodents. To meet the goal, WS has the objective of responding to all requests from NMGF, other public agencies and Tribes for assistance with, at a minimum, technical assistance or self-help advice, or, where appropriate and where cooperative or congressional funding is available, direct damage management assistance with professional WS Specialists conducting damage management actions. An IWDM approach would be implemented which allows the use of any legal technique or method, used singly or in combination, to meet the needs of requestors for resolving conflicts with beavers or muskrats. Agricultural producers and others requesting assistance would be provided with information regarding the use of effective nonlethal and lethal techniques. In many situations, the implementation of nonlethal methods such as exclusion-type barriers and pond-levelers would be the responsibility of the requestor to implement which means that, in those situations, WS's only function would be to implement methods difficult for the requestor to implement, if determined to be necessary. ARDM by WS would be allowed in the State, when requested, on private property sites, public facilities or other locations where a need has been documented, upon completion of an *Agreement for Control*. All management actions would comply with appropriate Federal, state, and local laws.

Alternative 2. No Federal WS ARDM. This alternative would consist of no federal involvement in ARDM in New Mexico - neither direct operational ARDM nor technical assistance to provide information on nonlethal or lethal ARDM techniques would be available from WS. The majority of the formerly federal ARDM assistance would be borne by NMGF. Private individuals could increase their efforts if NMGF were unable to respond adequately which means more ARDM would be conducted by persons with less experience and training, and with little oversight or supervision. Risks to the public, nontarget and T&E species, and wetlands would probably be greater than under Alternative 1, and effectiveness and selectivity would

probably be lower. In addition, frustrated resource owners that have endured recurring losses may resort to the use of illegal or inappropriate techniques that could result in unknown consequences.

Alternative 3. Technical Assistance Only. Under this alternative, WS would not provide any direct control assistance to persons experiencing aquatic rodent damage problems, but would instead provide advice, recommendations, and limited technical supplies and equipment. Lethal ARDM would likely be conducted by persons with little or no experience and training, and with little oversight or supervision. Risks to or conflicts with the public, wetlands, nontarget, and T&E species would probably be more than Alternative 1, but slightly less than or about the same as Alternative 2. The effectiveness of WS and selectivity of ARDM methods would probably be lower than Alternative 1. Finally as discussed above, frustrated resource owners that have endured recurring losses may resort to the use of illegal or inappropriate techniques that could result in unknown consequences.

Alternatives considered but not analyzed in detail were:

1. **Compensation for Aquatic Rodent Damage Losses.** Compensation would require the establishment of a system to reimburse resource owners for damages. This alternative was eliminated from further analysis because no federal or state laws currently exist to authorize such action for aquatic rodents. This Alternative was eliminated from further analysis because it had many problems associated with it as discussed in the EA.

2. **Bounties**. Payment of funds for killing aquatic rodents (bounties) suspected of causing economic losses has not been supported by New Mexico State agencies such as NMGF as well as most wildlife professionals for many years (Latham 1960). WS concurs with these agencies and wildlife professionals because of several inherent drawbacks and inadequacies in the payment of bounties This alternative was eliminated from further analysis.

3. **Wildlife Damage Should Be an Accepted Loss -- a Threshold of Loss Should Be Reached Before Providing ARDM Services.** Under such an alternative, WS would not provide any direct control or technical assistance until a certain economic threshold of damage had been reached. Although some loss of resources to wildlife can be expected and tolerated, WS has the legal direction to respond to requests for WDM, and it is Program policy to aid each requester to minimize losses.

4. **Eradication and Long Term Population Suppression.** An eradication alternative would direct all WS Program efforts toward total long term elimination of aquatic rodents in entire cooperating counties or larger defined areas in New Mexico. In New Mexico, the eradication of beaver and muskrat is not a desired goal of state agencies, although these species may be taken by the general public in areas where they are causing damage. This alternative was eliminated from further analysis because WS and NMGF oppose eradication of any native wildlife species, and because it is generally impossible to achieve. Long term population suppression is not a desired goal of state agencies or of WS for the analysis area as a whole but could be implemented for localized areas prone to aquatic rodent damage under the current program alternative (ie. urban neighborhoods). The impacts of localized population suppression are analyzed in the EA.

5. **Reproduction Control.** A review of research evaluating chemically induced and surgically induced reproductive inhibition as a method for controlling nuisance beaver populations is contained in Novak (1998). Although these methods were found to be effective in reducing beaver reproduction

by up to 50%, the methods were not found to be practical or were too expensive for large-scale application. At present, no chemical reproductive inhibitors are legal for use for beaver or muskrat. For these reasons, this method will not be considered further by WS. Should current research at NWRC with immunocontraceptives develop to the point of field use, it may be considered for certain situations in ARDM.

6. **Biological Control**. The introduction of a species or disease to control another species has occurred throughout the world, but has rarely been successful. In fact, many of the introduced species become pests themselves. This alternative was eliminated from further analysis because this method has many problems associated with it.

7. **Nonlethal required before Lethal Control.** This alternative would not allow the use of lethal methods by WS as described under the proposed action until nonlethal methods had been attempted to relieve damage caused by aquatic rodents and found to be ineffective or inadequate. Resource owners or managers would still have the option of implementing nonlethal and lethal control measures and WS would continue to recommend them where appropriate, but no preventive lethal control by WS would be allowed. However, personnel experienced in ARDM generally know when and where nonlethal control techniques would work; this alternative could result in the use of methods that are known to be ineffective in particular situations. This has normally been an alternative considered by WS, such as in the FEIS (USDA 1997) and other WS EAs such as the Aquatic Rodent Damage Management in Oklahoma EA (1998). This alternative has always been found to have slightly higher negative environmental impacts than the proposed action. In addition, it is WS policy that non-lethal ARDM be considered first. Therefore, this alternative was dropped from analysis in this EA.

Comments regarding the Alternative Selection

The following comments were received regarding the selection of an alternative in the Record of Decision suggesting the commentor's preferred alternative:

1. Support emphasizing relocation programs (2 commentors).
2. Support No WS ARDM program (Alternative 2), nonlethal only.
3. Support Nonlethal before Lethal Alternative.
4. Support eradication of nutria with lethal trapping and shooting.

Finding of No Significant Impact

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of the Proposed Action. I agree with this conclusion and therefore find that an Environmental Impact Statement need not be prepared. This determination is based on the following factors:

1. ARDM, as conducted by WS in New Mexico, is not regional or national in scope. It is a statewide program and the scope was discussed thoroughly in the EA. ARDM in New Mexico is for the most part conducted at the request of NMGF to fulfill their legal responsibilities Under the proposed Action, WS would continue to assist entities with aquatic rodent damage as necessary. Even if WS

were not involved, under state law most ARDM would be conducted by state and local government, or private entities that are not subject to compliance with NEPA.

2. The proposed action would pose minimal risk to public health and safety. No injuries to any member of the public are known to have resulted from WS ARDM activities. In addition, a risk assessment has analyzed the use of ARDM methods by WS (USDA 1997) and these were found to pose only minimal risks to the public, pets and nontarget wildlife species. This issue was addressed in the EA and the Proposed Action was found to have the least impacts.

3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. Almost all ARDM projects conducted by WS occur in agricultural and developed areas. All involve wetlands because this is where aquatic rodents live. However, as discussed in detail in the EA, wetlands are not impacted under the Proposed Action. Hand removal of dams by WS restores the wetland characteristics of an area that has been covered by the beaver pond which does not become a wetland for years.

4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to aquatic rodent control, this action is not highly controversial in terms of size, nature, or effect. Beaver and muskrat populations will not be significantly affected by ARDM under the Proposed Action, and is likely to be similar under the other Alternatives because NMGF is required by law to respond to problems except on Tribal and federal lands.

5. Based on the analysis documented in the EA, the effects of the proposed ARDM program on the human environment would not be significant. The effects of the activities under the Proposed Action are not highly uncertain and do not involve unique or unknown risks. These activities would occur as NMGF would have to respond to damage complaints. If NMGF were unable to respond quickly under the other Alternatives, a potential exists that could involve unique and unknown risks by non-professionals implementing ARDM and frustrated property owners that have been ineffective with ARDM methods resorting to the illegal use of chemicals.

6. The proposed action would not establish a precedent for any future action with significant effects. All issues under the proposed action were discussed thoroughly, and these would not add cumulatively to any known future actions that would result in significant effects.

7. No significant cumulative effects on the quality of the human environment were identified through the EA. The number of beaver and muskrat taken by WS, added to the total known other take of such species, is within the levels sustainable by their populations and authorized by the responsible State Agency, NMGF, that represent their interests.

8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources. If anything, the Proposed Action would have beneficial effects on these resources.

9. An evaluation of the proposed action and its effects on T&E species determined that no significant adverse effects would occur to such species. This is supported by the 1992 Biological Opinion (USDA 1997) and a subsequent New Mexico WS Biological Assessment with Concurrence from USFWS in 2003. No other T&E species have been listed in New Mexico since then.

10. The proposed action would be in compliance with all Federal, State, and local laws imposed for the protection of the environment. The proposed activity does not violate the Migratory Bird Treaty Act, the Endangered Species Act, or any other law. As allowed by State law, ARDM is such that the majority of ARDM will apparently be conducted by NMGF, or Tribe anyway that are not subject to compliance with NEPA if WS were not involved.

11. There are no irreversible or irretrievable resource commitments identified by this assessment, except for a minor consumption of fossil fuels for routine operations.

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Decision

I have carefully reviewed the EA and the input resulting from the public involvement process. I believe the issues and objectives identified in the EA would be best addressed through implementation of Alternative 1 (the Proposed or No Action Alternative to continue the current program). Alternative 1 is therefore selected because (1) it offers the greatest chance at maximizing effectiveness and benefits to affected resource owners and managers within current program funding constraints; (2) it will maximize selectivity of methods available; (3) it offers a balanced approach to the issue of humaneness when all facets of the issue are considered; (4) it will continue to minimize risk to or conflicts with the public; and (5) it will minimize risks to nontarget and T&E species. WS in New Mexico will continue to use an IWDM approach in compliance with all the applicable mitigation measures listed in Chapter 3 of the EA.

For additional information regarding this decision, please contact Alex Lara, State Director, USDA-APHIS-WS, 8441 Washington NE, Albuquerque, NM 87113 - (505) 346-2640.

Michael V. Worthen, Regional Director
APHIS-WS Western Region

2-5-04
Date